CLAIMS

What is claimed is:

1. A method of equalizing the signal to interference ratios (SIRs) of a plurality of physical channels, each physical channel having a first transmission power level, the method comprising:

determining the SIR for each of said plurality of physical channels; determining a first average SIR based upon the SIRs for said plurality of physical channels; and

calculating a new transmission power level for each of said plurality of physical channels; whereby said calculation of said new transmission power levels comprises:

ensuring the new SIRs of said plurality of physical channels are equal to each other; and

ensuring the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.

- 2. The method of claim 1, wherein said first average is a linear weighted average.
- 3. The method of claim 1, wherein said first average is a logarithmically weighted average.
- 4. A method of equalizing the signal to interference ratios (SIRs) of a plurality (i) of physical channels, each physical channel having a first power level P_i, the method comprising:

determining a first average SIR for said plurality (i) of physical channels; for each of said plurality (i) of physical channels:

determining the current transmission power level P_i; determining the current interference level I_i; and determining the spreading factor G_i; and for each of said plurality (i) of physical channels:

calculating a new transmission power level P_i ; whereby the new transmission power levels satisfy two conditions: 1) the new SIRs of said plurality of physical channels are equal to each other; and 2) the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.

- 5. The method of claim 4, further including applying said new transmission power levels P_i to said plurality (i) of physical channels.
- 6. The method of claim 4, wherein said calculation step further includes determining the ratio between the transmission power P_i of a physical channel and its interference level I_i .
- 7. The method of claim 6 wherein said calculation step further includes summing said ratios for all of said plurality (i) physical channels to provide a first sum.
- 8. The method of claim 7 wherein said calculation step further includes summing the inverse of the spreading factors for all of said plurality (i) of physical channels to provide a second sum.
- 9. The method of claim 8 wherein said calculation step further includes dividing said first sum by said second sum.
- 10. A communications unit for communicating on a plurality of physical channels, each physical channel having a first transmission power level, said unit comprising:

a signal processor for transmitting a plurality of signals on said plurality of physical channels; and

a circuit for controlling the power of each of said physical channels; whereby said circuit equalizes the signal to interference ratios (SIRs) of said plurality of physical channels by:

determining the SIR for each of said plurality of physical channels; determining a first average SIR based upon said SIR for said plurality of physical channels; and

calculating a new transmission power level for each of said plurality of physical channels; whereby said calculation of said new transmission power levels comprises:

ensuring the new SIRs of said plurality of physical channels are equal to each other; and

ensuring the new average SIR for said plurality of physical channels is substantially the same as said first average SIR.